

HRP Associates, Inc.

ENVIRONMENTAL/CIVIL ENGINEERING & HYDROGEOLOGY

FEDERAL EXPRESS

September 30, 1999

Ms. Marina Crawford
Waste Engineering and Enforcement Division
Bureau of Waste Management
Connecticut Department of Environmental Protection
79 Elm Street
Hartford, Connecticut 06106-5127

RCRA RECORDS CENTER
FACILITY MACDERMID
I.D. NO. CTD001164599
FILE LOC. R-13
OTHER RDMS# 100830



RDMS DocID 00100830

RE: RCRA CORRECTIVE ACTION ENVIRONMENTAL INDICATOR CHECKLIST,
MacDERMID, INC., 526 HUNTINGDON AVENUE, WATERBURY, CONNECTICUT
(HRP #MAC0026.CA)

Dear Ms. Crawford:

Enclosed for your review is the completed RCRA Corrective Action Environmental Indicator (EI) Checklist for the MacDermid, Inc. facility located at 526 Huntingdon Avenue in Waterbury, Connecticut (EPA ID #CTD001164599). As indicated in this checklist, it was HRP Associates' opinion that the "IN" status code applied to both EIs due to the limited environmental data available for review.

If you have any questions or require additional information, please do not hesitate to contact HRP at (860) 793-6899.

Sincerely,

HRP ASSOCIATES, INC.

Richard D. McFee, P.E.
Associate

Enclosure
RDM/db

cc: Greg Strong, MacDermid, Inc.

RECEIVED

OCT 01 1999

WASTE MANAGEMENT BUREAU
WATERBURY, CT 06093

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DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: MacDermid, Inc.
Facility Address: 526 Huntingdon Avenue, Waterbury, CT 06708
Facility EPA ID #: CTD001164599

1. Has all available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g. from Solid Waste Management Units (SWMU). Regulated Units (RU), and Areas of Concern (AOC), been considered in this EI determination?
- ☒ If yes – check here and continue with #2 below.
- ☐ If no –re-evaluate existing data, or
- ☐ If data are not available, skip to #8 and enter “IN” (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of “Migration of Contaminated Groundwater Under Control” EI

A positive “Migration of Contaminated Groundwater Under Control” EI determination (“YE” status code) indicates that the migration of “contaminated” groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original “area of contaminated groundwater” (for all groundwater “contamination” subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA. The “Migration of Contaminated Groundwater Under Control” EI pertains ONLY to the physical migration (i.e., further spread) of contaminated groundwater and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration/Applicability of EI Determinations

EI determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

**Migration of Contaminated Ground Water Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

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2. Is groundwater known or reasonably suspected to be “contaminated”¹ above appropriately protective “levels” (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

_____ If yes – continue after identifying key contaminants, citing appropriate “levels” and referencing supporting documentation.

_____ If no – skip to #8 and enter “YE” status code, after citing appropriate “levels” and referencing supporting documentation to demonstrate that groundwater is not “contaminated.”

✓ If unknown – skip to #8 and enter “IN” status code.

Rationale and Reference(s): Nineteen (19) specific areas of concern (AOCs) have been identified at the MacDermid, Inc. facility located at 526 Huntingdon Avenue in Waterbury, Connecticut. Five (5) of these AOCs have been selected due to past releases and/or their high potential for release. Although releases at the site are known to have occurred there is no analytical documentation available to confirm nor refute the presence of contaminated groundwater at the site. A detailed description of each AOC is provided in Attachment A.

Footnotes:

¹“Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate “levels” (appropriate for the protection of the groundwater resource and its beneficial uses).

Migration of Contaminated Ground Water Under Control
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3. Has the migration of contaminated ground water stabilized (such that contaminated groundwater is expected to remain within “existing area of contaminated groundwater”² as defined by the monitoring locations designated at the time of this determination)?

____ If yes – continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the “existing area of ground water contamination”²).

____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the “existing area of groundwater contamination”² – skip to #8 and enter “NO” status code, after providing an explanation.

✓ If unknown – skip to #8 and enter “IN” status code.

Rationale and Reference(s): _____

2. “existing area of contaminated groundwater” is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of “contamination” that can and will be sampled/tested in the future to physically verify that all “contaminated” groundwater remains within this area, and that the further migration of “contaminated” groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

**Migration of Contaminated Ground Water Under Control
Environmental Indicator (EI) RCRIS code (CA750)
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4. Does “contaminated” groundwater discharge into surface water bodies?

_____ If yes – continue after identifying potentially affected surface water bodies.

_____ If no – skip to #7 (and enter a “YE” status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater

✓ If unknown – skip to #8 and enter “IN” status code.

[illegible]

Migration of Contaminated Ground Water Under Control
Environmental Indicator (EI) RCRIS code (CA750)
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5. Is the discharge of “contaminated” groundwater into surface water likely to be “insignificant” (i.e., the maximum concentration³ of each contaminant discharging into surface water is less than 10 times their appropriate groundwater “level” and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

_____ If yes – skip to #7 (and enter “YE” status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration³ of key contaminants discharged above their groundwater “level,” the value of the appropriate “level(s),” and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

_____ If no – (the discharge of “contaminated” groundwater into surface water is potentially significant) – continue after documenting: 1) the maximum known or reasonably suspected concentration³ of each contaminant discharged above its groundwater “level,” the value of the appropriate “level(s),” and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations³ greater than 100 times their appropriate groundwater “levels,” the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

✓ _____ If unknown – enter “IN” status code in #8.

Rationale and Reference(s): _____

³ As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

Migration of Contaminated Ground Water Under Control
Environmental Indicator (EI) RCRIS code (CA750)
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6. Can the discharge of “contaminated” groundwater into surface water be shown to be “currently acceptable” (i.e., not cause impact to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented⁴)?

_____ If yes – continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site’s surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater, OR 2) providing or referencing an interim-assessment,⁵ appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment “levels,” as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no – (the discharge of “contaminated” groundwater cannot be shown to be “currently acceptable”) –skip to #8 and enter “NO” status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

✓ _____ If unknown – skip to 8 and enter “IN” status code.

Rationale and Reference(s): _____

⁴ Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

⁵ The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

**Migration of Contaminated Ground Water Under Control
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7. Will groundwater monitoring / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the “existing area of contaminated groundwater?”

_____ If yes – continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the “existing area of groundwater contamination.”

_____ If no – enter “NO” status code in #8.

✓ If unknown – enter “IN” status code in #8.

[illegible]

Migration of Contaminated Ground Water Under Control
Environmental Indicator (EI) RCRIS code (CA750)
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8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

☐ YE – Yes, “Migration of Contaminated Groundwater Under Control” has been verified. Based on a review of the information contained in this EI determination, it has been determined that the “Migration of Contaminated Groundwater” is “Under Control” at the _____ facility, EPA ID # _____, located at _____. Specifically, this determination indicates that the migration of “contaminated” groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the “existing area of contaminated groundwater”. This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

☐ NO – Unacceptable migration of contaminated groundwater is observed or expected.

☒ IN – More information is needed to make a determination.

Completed by (signature) _____ Date _____
(print) _____
(title) _____

Supervisor (signature) _____ Date _____
(print) _____
(title) _____
(EPA Region or State) _____

Locations where References may be found:

Final RCRA Facility Assessment, TRC Environmental Corporation
Environmental Indicators Review, CT Department of Environmental Protection

Contact telephone and e-mail numbers

(name) Richard D. McFee, P.E.
(phone #) (860) 793-6899
(e-mail) hrp6@ntplx.net

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: MacDermid, Inc.
Facility Address: 526 Huntingdon Avenue, Waterbury, Connecticut 06708
Facility EPA ID #: CTD001164599

1. Has all available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g. from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC), been considered in this EI determination?

☒ If yes – check here and continue with #2 below.
☐ If no –re-evaluate existing data, or
☐ If data are no available skip to #6 and enter “IN” (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of “Current Human Exposures Under Control” EI

A positive “Current Human Exposures Under Control” EI determination (“YE” status code) indicates that there are no “unacceptable” human exposures to “contamination” (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all “contamination” subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA. The “Current Human Exposures Under Control” EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program’s overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration/Applicability of EI Determinations

EI determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Current Human Exposures Under Control
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2. Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be “contaminated” above appropriately protective risk-based “levels” (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	_____	_____	✓	Refer to Attachment A
Air (indoors) ²	_____	_____	✓	
Surface Soil (e.g., <2 ft)	_____	_____	✓	Refer to Attachment A
Surface Water	_____	_____	✓	
Sediment	_____	_____	✓	
Subsurf. Soil (e.g., >2 ft)	_____	_____	✓	Refer to Attachment A
Air (outdoors)	_____	_____	✓	

_____ If no (for all media) – skip to #6, and enter “YE,” status code after providing or citing appropriate “levels,” and referencing sufficient supporting documentation demonstrating that these “levels” are not exceeded.

_____ If yes (for any media) – continue after identifying key contaminants in each “contaminated” medium, citing appropriate “levels” (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

✓ _____ If unknown (for any media) skip to #6 and enter “IN” status code.

Rationale and Reference(s): Nineteen (19) specific areas of concern (AOCs) have been identified at the MacDermid, Inc. facility located at 526 Huntingdon Avenue in Waterbury, Connecticut. Although contaminated soil has been removed from three (3) of the AOCs, there is no analytical documentation available to confirm nor refute that there are no “unacceptable” human exposures to contamination. A detailed description of each AOC is provided in Attachment A.

Footnotes:

¹ “Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based “levels” (for the media, that identify risks within the acceptable risk range).

² Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
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3. Are there complete pathways between “contamination” and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

<u>“Contaminated” Media</u>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food³
Ground water	_____	_____	_____	_____			_____
Air (indoors)	_____	_____	_____				
Soil (surface, e.g., <2 ft)	_____	_____	_____	_____	_____	_____	_____
Surface Water	_____	_____			_____	_____	_____
Sediment	_____	_____			_____	_____	_____
Soil (subsurface e.g., >2 ft)				_____			
Air (outdoors)	_____	_____	_____	_____	_____		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors³ spaces for Media which are not “contaminated”) as identified in #2 above.
2. enter “yes” or “no” for potential “completeness” under each “Contaminated” Media – Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential “Contaminated” Media – Human Receptor combinations (Pathways) do not have check spaces (“_”). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

- _____ If no (pathways are not complete for any contaminated media-receptor combination) – skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).
- _____ If yes (pathways are complete for any “Contaminated” Media – Human Receptor combination) – continue after providing supporting explanation.
- _____ If unknown (for any “Contaminated” Media – Human Receptor combination) – skip to #6 and enter “IN” status code.

Rationale and Reference(s): _____

³Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway) – skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

_____ If yes (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway) – continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

✓ If unknown (for any complete pathway) – skip to #6 and enter “IN” status code.

[illegible]

⁴ If there is any question on whether the identified exposures are “significant” (i.e., potentially “unacceptable”) consult a human health Risk Assessment specialist with appropriate education, training and experience.

5. Can the “significant” exposures (identified in #4) be shown to be within acceptable limits?

- _____ If yes (all “significant” exposures have been shown to be within acceptable limits) – continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “contamination” are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).
- _____ If no (there are current exposures that can be reasonably expected to be “unacceptable”) – continue and enter “NO” status code after providing a description of each potentially “unacceptable” exposure.
- _____ If unknown (for any potentially “unacceptable” exposure) – continue and enter “IN” status code.

Rationale and Reference(s):

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI (event code CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

_____ YE – Yes, “Current Human Exposures Under Control” has been verified. Based on a review of the information contained in this EI Determination, “Current Human Exposures” are expected to be “Under Control” at the _____ facility, EPA ID # _____, located at _____ under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

_____ NO – “Current Human Exposures” are NOT “Under Control.”

☒ IN – More information is needed to make a determination.

Completed by (signature) _____ Date _____
(print) _____
(title) _____

Supervisor (signature) _____ Date _____
(print) _____
(title) _____
(EPA Region or State) _____

Locations where References may be found:

Final RCRA Facility Assessment, TRC Environmental Corporation
Environmental Indicators Review, CT Department of Environmental Protection

Contact telephone and e-mail numbers

(name) Richard D. McFee, P.E.
(phone #) (860) 793-6899
(e-mail) hrp6@ntplx.net

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

APPENDIX A

Areas of Concern

Page 1

Nineteen (19) areas of concern (AOCs) have been identified at the MacDermid, Inc. site located at 526 Huntingdon Ave., Waterbury, Connecticut. The general location of each AOC is shown on Figure 1. Each AOC is been briefly described below.

AOC #1: Metal Hydroxide Sludge and Waste Lagoon

Description: This 50' by 95' area, located on the opposite side of Huntingdon Avenue on MacDermid property, was used as a disposal lagoon for approximately 1000 yd³ of unspecified organic and inorganic wastes in 1978. The sludge and soil wastes originated from two (2) lagoons which received process wastes. The lagoon was also used to receive metal hydroxide sludge from MacDermid's new WWTS which could contain chromium, lead, copper, nickel, iron, silver and cyanide.. An asphalt cap was installed in 1986 to prevent surface water from percolating through the former lagoon (TRC, 1993).

Known or

Suspected Releases: In 1982-1983 approximately 168 yd³ of sludge and soil were removed and disposed off-site. This unlined lagoon, created in 1978, was not capped until 1986. Documentation of confirmatory sampling upon capping the lagoon is not available (CTDEP, 1998). In 1993, TRC reported that cracks present in the asphalt may continue to allow surface water to penetrate the lagoon.

AOC #2: Former Waste Lagoons

Description: This area is located on the east side of the Huntingdon Avenue building. From circa 1930 to 1978 the organic and inorganic waste lagoons mentioned above were used to dispose of MacDermid's process wastes (CTDEP, 1998). Sludge and soil from these lagoons was excavated in 1978 and deposited into AOC #1. The area is presently completely paved with asphalt.

Known or

Suspected Releases: On October 1, 1992, limited groundwater monitoring data from wells located near the lagoons showed elevated concentrations of chromium, copper and nickel. The levels were greater than the standards established in the Connecticut Remediation Standard Regulations (RSR) for surface water protection and groundwater protection for GA areas (CTDEP, 1998).

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Areas of Concern

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AOC #3: Ink Spill Area

Description: This AOC is located outside the north end of the Gear Street building. Discovered in 1987 by IPC personnel, the area received ink waste from a leak in the former collection sump. The wastes released in this area included pigments, solvents, anilines, resins, and polymers used in ink blending (TRC, 1993). The area is presently located beneath a concrete pad.

Known or

Suspected Releases: Various wastes were released from a leak in the former collection sump. After discovery and inspection of the stained area, approximately 550 ft³ of contaminated soil containing elevated levels of toluene, 1,1,1-trichloroethane, ethyl benzene and xylene were excavated (CTDEP, 1998). An investigation of the groundwater in the area was not conducted. Information regarding the volume, toxicity and mobility of the wastes at this location is not available (TRC, 1993).

AOC #4: Underground Storage Tanks (UST)

Description: A 5,000-gallon heating oil UST and a 10,000-gallon fuel oil UST are located on the north side and east side of the Huntingdon Avenue respectively. The fuel oil UST is presently empty while the heating oil UST is currently in use. A yearly tightness test is conducted on the tanks (TRC, 1993).

Known or

Suspected Releases: There is no documentation of a release from either of these USTs (TRC, 1993).

AOC #5: Transformer Vault

Description: A 4'x4'x4' steel transformer vault is located on a concrete pad outside the south side of the Gear Street building (TRC, 1993).

Known or

Suspected Releases: There are no documented releases concerning this AOC (TRC, 1993).

APPENDIX A

Areas of Concern

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AOC #6: Wastewater Treatment System (WWTS)

Description: The WWTS located in the southwest corner of the Huntingdon Avenue building was installed in 1978. The system consists of 13 treatment tanks, a filter press and a metal hydroxide sludge roll-off dumpster (CTDEP, 1998). Copper etchant, solder stripper, electroless-nickel and spills from dry chemical blending areas and hazardous waste storage areas are treated in the WWTS (TRC, 1993). Treated wastewater is ultimately discharged to the Waterbury Sewage Treatment Plant. As of May 1998, four (4) new treatment tanks with secondary containment have been installed and operation and maintenance of the WWTS has improved (CTDEP, 1998).

Known or

Suspected Releases: According to CTDEP files, the WWTS tanks have leaked on several occasions. On January 28, 1991, 7,000 gallons of wastewater were released from a holding tank and entered the Naugatuck River. Additional information regarding this spill is not available. In November 1994, a 1,500 gallon spill of a copper etchant solution was also released into the Naugatuck River (CTDEP, 1998).

AOC #7: Dry Chemical Silos

Description: Four (4) 10,000-gallon steel silos are located on a concrete pad outside the east side of the Huntingdon Avenue building. The silos were formerly used for the storage of dry sodium carbonate, sodium metasilicate, sodium hydroxide and sodium hydrogen sulfate. They are currently empty and are scheduled to be removed from the site (CTDEP, 1998).

Known or

Suspected Releases: There is no documentation of a chemical release from the silos (TRC, 1993).

AOC #8: East Aurora Street Warehouse

Description: This warehouse contains the main hazardous waste storage area, the spot-check QA/QC area, two loading docks and the finished product storage area (CTDEP, 1998). The entire warehouse has concrete walls and epoxy coated concrete floors which are sloped toward the interior of the building into containment sumps. Material collected in the

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Areas of Concern

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sumps can be released to the WWTS or containerized. Approximately 77,000 gallons of hazardous waste can be stored in the north end of the warehouse inside a bermed area. The QA/QC area in the shipping and receiving area along East Aurora Street is also equipped with a 3.5" concrete containment berm. Catch basins in the shipping and receiving areas are covered during loading and unloading operations (TRC, 1993). Any spilled materials will be contained by the berms and walls of the building. The warehouse is used to store copper etchant, solder stripper, electroless-nickel solutions, inks and all non-flammable/non-combustible wastes.

Known or

Suspected Releases: There have been no documented chemical releases associated with this AOC (TRC, 1993).

AOC #9: Pilot Plant

Description:

The Pilot Plant, QA/QC labs and the small packaging area are located in the northeast corner of the Huntingdon Avenue building. The Pilot Plant, which creates small batches of sample products for customers, has an epoxy coated concrete floor which is sloped toward a collection sump. The material in this sump can be containerized or released to the WWTS. Spills occurring in the QA/QC lab and the small packaging area are contained within the walls of the rooms (TRC, 1993). Chemicals handled in these areas include copper etchant, solder stripper, inks, electroless-nickel plating solution, dry batch chemicals and components of these materials (TRC, 1993).

Known or

Suspected Releases: There have been no documented chemical releases associated with this AOC, however the QA/QC labs were cited by the CTDEP for poor waste management (TRC, 1993).

AOC #10: Main Mixing Area

Description:

The main mixing area, located in the center of the Huntingdon Avenue building, was formerly used to blend copper plating solutions, however, it is presently used to repackage dry chemicals into smaller units for sale (TRC, 1993). The area has a dust collector and an epoxy-coated concrete floor with floor drains connected to the WWTS.

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Known or

Suspected Releases: There is no documentation of chemical releases from this AOC. Drums are occasionally washed in this area (TRC, 1993).

AOC #11: Satellite Storage Areas

Description: There are three (3) satellite chemical storage located in the Pilot Plant (1) and the ink mixing area (2). Each area consists of up to two 55-gallon drums inside a bermed secondary containment area. When full, the drums are transferred to the hazardous waste storage area (TRC, 1993). Waste ink rags, solvents, pigments, miscellaneous plating solutions, solvents, acids and other compatible materials are collected in these areas.

Known or

Suspected Releases: There have been no documented chemical releases from the satellite storage areas (TRC, 1993).

AOC #12: Flammable Rack Storage

Description: The flammable rack storage area is located on a concrete pad north of the Gear Street building. The pad is equipped with a roof and is surrounded on three sides by fiberglass wallboard. Flammable materials such as alcohol, solvents and acetone are stored in this area (TRC, 1993).

Known or

Suspected Releases: There is no documentation of chemical releases from this AOC (TRC, 1993).

AOC #13: Chemical Storage Area – Gear Street Building

Description: The chemical storage area in the Gear Street building consists of the less-than-90-day storage area, a flammable storage area and the combustible storage area. Each area has an epoxy-coated concrete floor and is surrounded by a four inch concrete containment berm. There are floor trenches outside the bermed areas which are connected directly to the WWTS. Ink wastes, copper and other sulfates, filters, tin and copper chlorides, acetone, isopropanol, methanol, ether, acetate, anilines and acrylimides have been stored in these areas (TRC, 1993).

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Known or

Suspected Releases: There have been no documented chemical releases from this AOC (TRC, 1993).

AOC #14: Bulk Waste Loading and Storage Areas

Description: This area, located at the northwest corner of the Huntingdon Avenue building, is used primarily for loading and unloading of copper etchant. There are four bulk copper etchant storage tanks, a loading dock and a drum washing area located in this area. This AOC has an epoxy-coated concrete floor which is sloped toward a collection sump connected to the WWTS (TRC, 1993). A 2'7" concrete containment berm surrounds the storage tanks (CTDEP, 1998).

Known or

Suspected Releases: On February 10, 1990, a CTDEP inspector cited MacDermid for allowing drum wash water to enter stormwater catch basins leading to Steele Brook. Water samples collected from the drum washing operation contained 320 ppm copper and 5.6 ppm lead. An injunction was requested to stop this practice. Catch basins near this AOC are currently covered during all drum washing and loading/unloading activities (TRC, 1993).

AOC #15: Copper Etchant Processing Area

Description: This AOC, located in the western portion of the Huntingdon Avenue building, houses a 13 tank copper etchant recycling system. The area has a sloped epoxy-coated concrete floor equipped with floor drains connected to the WWTS. Recycled copper etchant is transferred into three (3) finished product storage tanks adjacent to AOC #14 (TRC, 1993).

Known or

Suspected Releases: There is no documentation of a chemical release from this AOC (TRC, 1993).

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AOC #16: Ink Manufacturing Area

Description: The ink manufacturing area, located in the central area of the Gear Street building, contains equipment for the blending of inks. If a spill did occur during this process, it would be contained by the epoxy-coated concrete floor and walls of the building and cleaned up with rags. The rags, waste solvents, pigments and polymers are stored in satellite storage areas (AOC #11). Materials associated with this area include polymers, resins, anilines, solvents, powder pigments and acrylimides.

Known or

Suspected Releases: While there is no release directly associated with this AOCs, the collection sump formerly operating in this area released chemicals to the surrounding soil (see AOC #3). The collection sump has since been closed (TRC, 1993).

AOC #17: Solder Stripping Reclaim Area

Description: The solder stripping reclaim area, located in the northwest corner of the Gear Street building, houses a settling tank, two (2) electrolytic cells, two (2) storage tanks and a filter press. The area has a sloped epoxy-coated concrete floor with floor drains that are connected to the WWTS (TRC, 1993). According to CTDEP records, the tanks are no longer in use.

Known or

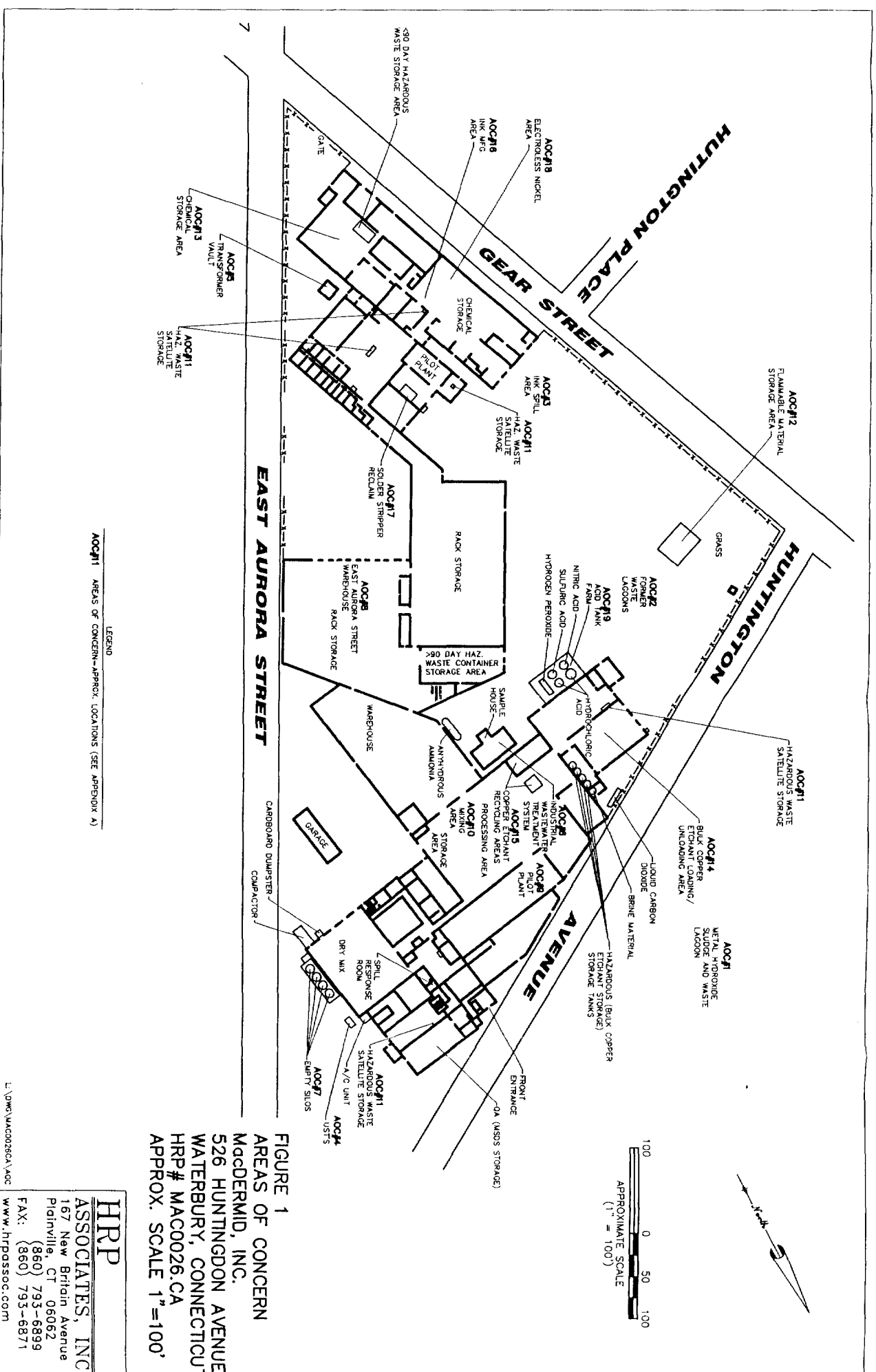
Suspected Releases: There is no documentation of a chemical release from this AOC (TRC, 1993).

AOC #18: Electroless Nickel Area

Description: This area, located on the west side of the Gear Street building, contains eight process tanks for manufacturing electroless-nickel plating solutions. The area has an epoxy-coated concrete floor sloped toward a floor trench. A wet scrubber is also present to eliminate the ammonia vapors generated in this process (TRC, 1993).

Known or

Suspected Releases: There is no documentation of a chemical release from this AOC (TRC, 1993).



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